Math 3298 Worksheet 22: Divergence theorem

Group members (1 to 3): _____

(1) Calculate the flux of $\vec{F} = (xy, yz, zx)$ out of the closed cylinder $x^2 + y^2 \leq 1$, $z \geq 0$, $z \leq 1$:
   (a) Directly

   (b) ... by using the divergence theorem.

(2) Use the divergence theorem to write the volume of a three-dimensional region R as a surface flux integral.